
Water Use Efficiency Program Plan

Responses to Comments

WATER USE EFFICIENCY PROGRAM PLAN

RESPONSES TO COMMENTS

0. General Responses

WUE 00-1

The Water Use Efficiency Program is predicated on the philosophy of influencing more water users, agricultural and urban, to implement more cost-effective conservation measures. To reach this objective, the program contains significant incentive programs (including funding) coupled with assurance mechanisms. These elements are discussed in more detail in Section 2 in the Water Use Efficiency Program Plan.

Many stakeholders have stated, “If agricultural could save just 10% of its water use, there would be enough water to satisfy other needs.” CALFED has attempted to end this debate by demonstrating that agriculture can significantly reduce its applications of water, but the resulting “new water” available to satisfy other needs is markedly smaller than the total reduction. A detailed explanation is presented in Section 4.5 in the Water Use Efficiency Program Plan. In short, a vast majority of the “inefficiencies” of agriculture manifest themselves in surface runoff and deep percolation that is reabsorbed into the local hydrologic system and is used for other beneficial users down gradient—from wetlands, habitats, and streams to other diverted agricultural and urban users. As such, the 10% savings may be achievable but may provide only a 2-3% increase in available water.

Even without the benefit of water savings, however, conservation measures can result in beneficial effects on water quality and ecosystem health. These alone are sufficient reasons to develop incentives for much greater levels of conservation throughout the state and throughout all water use sectors.

WUE 00-2

The CALFED Bay-Delta Program (CALFED Program) is not changing the existing legal authorities with jurisdiction to review and approve water transfers, regardless of whether the source is conservation, land fallowing, reservoir reoperation, or conjunctive use. These authorities already exist in several state, federal, and tribal entities.

WUE 00-3

Water use efficiency measures will result in a reduction of water currently flowing to irrecoverable sources in some regions of the state. CALFED recognizes that this is not universal and aptly separated conservation estimates into two categories: those that do provide water for reallocation and those that do not.

Furthermore, water use efficiency measures are not the only action that can be taken to make water available to transfer from one water rights holder or user to another. Reservoir reoperation, land fallowing, crop shifting, and conjunctive use are all actions that can generate water to transfer.

CALFED's conservation estimates, discussed in Sections 4, 5, and 6 in the Water Use Efficiency Program Plan, are a much more appropriate manner to estimate conservation potential than simply extrapolating an estimate provided by the California Irrigation Management Information System (CIMIS) program. The conservation estimates in the Water Use Efficiency Program Plan are not targets, objectives, or goals. CALFED is not mandating that these or any other levels of water savings be achieved. CALFED is, however, requiring that many actions be undertaken by water suppliers and water users that will result in the implementation of more conservation and more reuse projects. The actual savings that will result cannot be accurately estimated.

Unfortunately, the specific comments reference an old document that has since been updated. CALFED encourages you to review the Water Use Efficiency Program Plan and the Water Transfer Program Plan for more up-to-date information regarding your concerns. Many of your concerns are addressed in these more recent documents.

CALFED agrees with many of the principles embodied in the Blueprint for an Environmentally and Economically Sound CALFED Water Supply Reliability Program (November 8, 1998) ("Blueprint"). This is evidenced by the wide variety of water management tools included in the Preferred Program Alternative. CALFED has included an aggressive Water Use Efficiency Program directed at incentives and assurance mechanisms to result in more efficient use of existing water supplies. CALFED has also recommended several improvements to the existing water market structure in order to enable water transfers to play an integral role in statewide water management. Please refer to the appropriate program plan for more information about these two programs.

It should be understood that CALFED is requiring many actions to be undertaken by water suppliers and water users that will result in the implementation of more conservation and more reuse projects. However, the actual savings that will result cannot be accurately estimated. Thus, values presented by the "Blueprint," especially with limited documentation on their derivation, are not very useful to the Program at this time.

Furthermore, the CALFED agencies believe that the conservation estimates are reasonable, based on information garnered from many sources (as documented in the Water Use Efficiency Program Plan). For instance, the independent review panel (refer to the Summary Report by the Independent Review Panel on Agricultural Water Conservation Potential, December 14-16, 1998; report prepared January 29, 1999) identified many necessary refinements that could be made to CALFED's agricultural estimates but also stated that these programmatic-level estimates were "reasonable initial estimates of overall agricultural water conservation potential." Staff is currently in the process of reviewing and updating its technical work based on the panel's direction.

The numerical estimates of water use efficiency potential have been computed to avoid double-counting of benefits. In many cases, however, water can be put to multiple uses as it flows through streams, agricultural land, and groundwater. Site-specific benefits will be estimated on a case-by-case basis and provided to the public in project-specific environmental documentation.

CALFED agrees that the programmatic level of analysis does not provide an analysis of specific conservation projects and their potential benefits. However, the Programmatic Environmental Impact Statement/ Environmental Impact Report (EIS/EIR) does present analysis on the range of impacts that could result from implementing a range of efficiency improvements. More details regarding the types and magnitudes of benefits are the subject of the Water Management Strategy being developed as part of studies separate from the Programmatic EIS/EIR. The strategy will be used to assess varying levels of conservation and water transfers and to better understand the feasibility of different approaches. CALFED encourages any stakeholders interested in the development of the Water Management Strategy to become involved through public meetings and opportunities for public comment. This effort will continue into Stage 1 of the CALFED implementation phase and should result in a useful tool to assist decision makers in implementing various aspects of the Preferred Program Alternative.

Changes in the Water Use Efficiency Program

WUE P-1

CALFED appreciates this mistake being noticed and has corrected it with the appropriate value of “up to 1.5 MAF.”

WUE P-2

The incentive-based approach will rely on local water suppliers and water managers to propose actions for achieving quantifiable objectives. However, the strategic plan will provide a list of potential actions to aid local water suppliers in planning and proposal preparation.

1.1 Public Policy Foundations

WUE 1.1-1

California public policy places a strong emphasis on efficient use of developed water supplies. The California Constitution (Article X, Section 2) prohibits “waste or unreasonable use” of water and excludes from water rights any water that is not reasonably required for beneficial use. The constitutional prohibitions of waste and unreasonable use are repeated in Sections 100 and 101 of the California Water Code. The state’s process for appropriation of water rights also is based on furtherance of the constitutional policy of reasonable and beneficial use (Cal: Water Code Section 1050). CALFED does not have the authority to negotiate water contracts; however, the State Water Resources Control Board (SWRCB) can and does place water conservation conditions on water rights permits that it approves. The basis for the Water Use Efficiency Program element is not to address water rights but to resolve problems related to ecosystem health, water quality, water supply reliability, and levee system integrity.

1.2 Water Use Efficiency in the Bay-Delta System Today

WUE 1.2-1

This response has been consolidated with response IPF 5.0-1 (under Implementation Plan Responses to Comments). Please refer to that response for an answer to your comment.

1.3 Basis for a CALFED Water Use Efficiency Program

WUE 1.3-1

As described in this section in the Water Use Efficiency Program Plan, one of the primary benefits of conservation is helping to meet CALFED's goal of increased water supply reliability. Conservation measures can help to reduce current demand and allow the same quantity of water to be used for a broader set of needs. In some cases, this may result in changes in the quantity or timing of water exported from the Delta. For instance, if an agricultural user who relies on exported water conserved water and transferred it to an urban user who also relies on exports, the amount of export would not decrease, but the timing of diversion may change (agricultural vs. urban water use patterns). If, however, a water user implements conservation measures paid for by a non-export interest (which could include the environment), the quantity of Delta exports could decrease.

CALFED does recognize that, for the most part, conservation and other water management activities are unlikely to dramatically change existing Delta export quantities. Improved south-of-Delta storage and Delta conveyance will modify how and when those exports occur.

1.4 Summary of Potential Water Conservation and Recycling

WUE 1.4-1

Table 1-1 in the June 1999 Water Use Efficiency Program Plan shows 7.5 million acre-feet (MAF) of total water conservation and recycling potential. Of this amount, only 2.6 MAF is available to potentially be reallocated to meet current shortages or increased future demands. The existing storage and conveyance facilities are incapable of readily "transferring" the 2.6 MAF from their current uses to where the increased demands exist. Please refer to common response 2 for more information regarding why the Preferred Program Alternative includes storage.

WUE 1.4-2

CALFED is in the process of developing regional quantifiable objectives for agricultural water use efficiency. These objectives will take into account regional differences in water supply, drainage destination, topography, soils, and other pertinent factors.

WUE 1.4-3

The estimates presented in these tables are summaries of conservation estimates from Section 4, 5, and 6 in the Water Use Efficiency Program Plan. Please refer to these sections in the June 1999 Water Use Efficiency Program Plan for more information on assumptions, methodologies, and references.

WUE 1.4-4

Many comments state that CALFED has either underestimated or overestimated water conservation and water recycling potential. CALFED's estimates were developed for a few primary purposes:

- To provide information for programmatic-level impact assessments.
- To gain a better understanding of the order-of-magnitude role conservation and recycling can play in statewide water management.

- To aid CALFED in designing the appropriate types and levels of incentive programs and assurance mechanisms.

The conservation estimates in the Water Use Efficiency Program Plan are not targets, objectives, or goals. CALFED is not mandating that these or any other levels of water savings be achieved. CALFED is, however, requiring that many actions be undertaken by water suppliers and water users that will result in the implementation of more conservation and more reuse projects. The actual savings that will result cannot be accurately estimated.

The CALFED agencies believe that the conservation estimates are reasonable. The independent review panel (refer to the Summary Report by the Independent Review Panel on Agricultural Water Conservation Potential, December 14-16, 1998; report prepared January 29, 1999) identified many necessary refinements that could be made to CALFED's estimate, but also stated that these programmatic level estimates were "reasonable initial estimates of overall agricultural water conservation potential." Staff is currently in the process of reviewing and updating its technical work based on the panel's direction.

Please also refer to common response 2.

WUE 1.4-5

As indicated in the summary tables in this section and in Section 6 in the Water Use Efficiency Program Plan, water recycling is an important part of the program.

2. Water Use Efficiency Program Description

WUE 2-1

Consistent with CALFED's solution principle of posing no significant redirected impacts, the Water Use Efficiency Program element is based on a voluntary, incentive approach. It is believed that this approach will provide the largest gains in efficiency within the CALFED solution area.

WUE 2-2

Thank you.

2.1 Program Objectives

WUE 2.1-1

The Water Use Efficiency Program will strive to build on existing water conservation programs with agencies such as the Department of Water Resources (DWR), the U.S. Bureau of Reclamation (Reclamation), and the Natural Resource Conservation Service. When appropriate, CALFED water use efficiency objectives will take into account the water use efficiency improvements already instituted by water purveyors.

On page 1-4 in the June 1999 Water Use Efficiency Program Plan, the document states, "California irrigators and growers have implemented pioneering methods to manage water supplies and improve efficiency." Further, the Water Use Efficiency Program will rely on an incentive-based approach and will not mandate metering. The incentive-based approach will be based on quantifiable objectives that will simultaneously recognize regional conservation needs and past conservation efforts. The element also will incorporate the work of the Agricultural

Water Management Council (AWMC) (formerly Assembly Bill [AB] 3616). Please also refer to response WUE 2.3.1-4.

WUE 2.1-2

The Water Use Efficiency Program supports and is expected to encourage local water conservation actions, which may include the suggestions put forth in the comment letters. The CALFED agencies believe that local creativity and ingenuity will provide the best solutions. CALFED anticipates building on the water use efficiency achievements in both the agricultural and urban water use sectors. Please see common response 11 for more information about crop selection and agricultural practices. Also see common response 2 for a broad overview of the Water Use Efficiency Program.

WUE 2.1-3

Consistent with Water Use Efficiency Program policy to use an incentive-based approach and to incorporate the work of the AWMC, local entities will be expected to implement only water management practices that are locally cost effective. Practices that are not locally cost effective but provide a benefit to the Bay-Delta system are expected to be funded through CALFED grants. Consequently, water use efficiency actions are not expected to result in potentially significant adverse impacts. Any proposed actions that would result in potentially significant adverse impacts would not be pursued under this program.

Please see common response 21 and response WUE 2-1 for more information about CALFED's solution principles. Also see response WUE 4.7-1 for more information about cropping patterns and their relationship to the Water Use Efficiency Program.

WUE 2.1-4

The Water Use Efficiency Program has the stated objective of reducing irrecoverable flows (by reducing flows to salt sinks and the atmosphere) and of achieving multiple benefits (by reducing losses that currently return to the water system). Although these objectives likely will result in reduced demands, they are not focused on demand reduction but rather on supply reliability, water quality, and in-stream flow/timing.

WUE 2.1-5

CALFED considers efficient water use to occur when those water management actions are implemented that provide the greatest CALFED benefits. This definition provides the greatest flexibility in implementing appropriate efficiency programs while avoiding the type of adverse impacts described in this comment.

2.2 Program Approach

WUE 2.2-1

The estimates provided in the Water Use Efficiency Program Plan provide this type of information at the levels necessary for programmatic planning and evaluation. Refinements of these estimates and evaluation of associated costs will continue during Stage 1 implementation as part of several CALFED efforts. Local entities will be expected to implement only water management practices that are locally cost effective. Practices that are not locally cost effective but provide a benefit to the Bay-Delta system are expected to be funded through CALFED grants.

WUE 2.2-2

A comparison of Section 2.2.1, “Agricultural Water Use Efficiency Approach,” and Section 2.2.2, “Urban Water Use Efficiency Approach,” in the Water Use Efficiency Program Plan shows that the program approaches are different. Consequently, the funding and responsibility are expected to be different.

WUE 2.2-3

A comparison of Section 2.2.1, “Agricultural Water Use Efficiency Approach,” and Section 2.2.2, “Urban Water Use Efficiency Approach,” in the Water Use Efficiency Program Plan shows that the program approaches are different. Consequently, the role of the respective conservation councils is expected to be different.

WUE 2.2-4

CALFED is currently developing quantifiable objectives and selection criteria for its water use efficiency incentives that will give priority to water management projects that promise the greatest benefits to the Bay-Delta system. These objectives and criteria will be completed during the first year of Stage 1.

WUE 2.2-5

CALFED intends this language to refer to the Water Use Efficiency Program actions, including funding programs, technical assistance, and assurance mechanisms. Combined, these actions will result in much greater levels of implementation of water use efficiency and recycling measures. As part of an overall Water Management Strategy, this aggressive implementation will be coupled with surface and groundwater storage to help improve water supply reliability.

2.2.1 Agricultural Water Use Efficiency Approach

WUE 2.2.1-1

As stated on page 2-5 in the June 1999 Water Use Efficiency Program Plan, CALFED is currently creating an agricultural water use efficiency strategic plan. This plan will articulate a prioritized, strategic, aggressive program to achieve efficient water management for all purposes throughout the many different agricultural regions of the state. The plan will focus in detail on specified regions, basins, and districts on a prioritized basis. Also see common response 2.

WUE 2.2.1-2

On page 1-4 in the June 1999 Water Use Efficiency Program Plan, the document states, “California irrigators and growers have implemented pioneering methods to manage water supplies and improve efficiency.” Further, the Water Use Efficiency Program will rely on an incentive-based approach and will not mandate metering. The incentive-based approach will be based on quantifiable objectives that will simultaneously recognize regional conservation needs and past conservation efforts. The element also will incorporate the work of the AWMC (formerly AB 3616). Please also refer to response WUE 2.3.1-4. Although CALFED intends to draft legislation requiring appropriate measurement of water use, CALFED does not intend to mandate incentive pricing.

WUE 2.2.1-3

A high level of water use efficiency is an expected requirement for permits for surface storage. Widespread demonstration of efficient use by water users will be a prerequisite to CALFED implementation of new storage projects that provide water supply to those users.

WUE 2.2.1-4

CALFED will provide technical assistance and financial incentives in the form of loans for actions or activities that have been identified as cost effective for local water suppliers in water management plans approved by the AWMC.

WUE 2.2.1-5

CALFED is developing, in consultation with the AWMC, a program of technical and financial incentives for the implementation of water use efficiency measures in the agricultural sector. A component of the strategic plan will be the development of a request for proposal that will utilize local input. The strategic plan is expected to be completed during the first year of Stage 1.

WUE 2.2.1-6

During Phase III, (implementation), CALFED will implement many types of incentives to foster water use efficiency implementation. Specific incentive mechanisms, such as tax credits, will be investigated at that time.

2.2.2 Urban Water Use Efficiency Approach

WUE 2.2.2-1

The Bay Area Regional Water Recycling Project (BARWRP) Recycling Master Plan has found recycling to have some advantages over other traditional water supply projects in areas of timing and environmental benefits.

A primary component of the Water Use Efficiency Program is providing incentives, such as grants and low-interest loans, to help water suppliers and water users implement cost-effective conservation measures. CALFED does not limit these incentives to any particular method of conservation. Therefore, greywater irrigation, if a cost-effective approach for a particular interested party, would be supported by the Program.

WUE 2.2.2-2

Several times in the Water Use Efficiency Program Plan, CALFED states that conservation estimates are not intended to be targets or goals to be achieved by the Water Use Efficiency Program. Rather, they are estimates of what may occur as a result of the incentives and assurance mechanisms that CALFED is pursuing. The estimates provide information to guide programmatic impact analysis and to understand the order-of-magnitude role of conservation in statewide water management.

Please also refer to response WUE 5.4-1 for more information regarding “full implementation of best management practices (BMPs).”

WUE 2.2.2-3

The Water Use Efficiency Program and the proposed urban certification process will exempt water suppliers from implementing water conservation activities that are not cost effective. However, the cost of conservation planning and certification compliance are considered to be the responsibility of water agencies under the California Water Code prohibitions against waste and unreasonable use. The proposed consequences of the certification process would limit an agency's access to new CALFED water and is not expected to affect existing water rights.

WUE 2.2.2-4

CALFED staff is actively working with stakeholders to clarify its Certification process. Staff expects to make significant progress in outlining the Certification process prior to the Record of Decision (ROD) and to complete the approach during Stage 1. However, any Certification proposal that advances the CALFED process will require legislative approval.

WUE 2.2.2-5

The CALFED Program will extend the progress already made by (1) providing financial and technical support for urban water use efficiency programs, and (2) instituting a process to certify water supplier compliance with the Urban Memorandum of Understanding (MOU), thus assuring full implementation of cost-effective BMPs.

WUE 2.2.2-6

Any certification proposal advanced as part of the CALFED process will require legislative approval. At present, the California Urban Water Conservation Council (CUWCC) is a non-profit organization created by the Urban MOU to provide support and assistance in implementing cost-effective urban BMPs. The council is governed by two voting groups: Group 1 consists of water agencies, and Group 2 is comprised of environmental and public advocacy organizations. Under certification, the CUWCC's status will need to be formalized by the Legislature, and a separate enforcement entity (such as the SWRCB) will need to be designated.

WUE 2.2.2-7

The document contains separate sections for urban efficiency and recycling.

WUE 2.2.2-8

Many benefits are expected to result from the Water Use Efficiency Program.

WUE 2.2.2-9

This detail of the certification process is not completely defined in this Programmatic EIS/EIR but will be resolved during Stage 1 refinement.

2.2.3 Managed Wetlands Water Approach

WUE 2.2.3-1

CALFED intends to use incentive-based quantifiable conservation objectives for environmental resources that apply water, including wildlife refuges and other managed wetlands.

2.2.4 Water Recycling Approach

WUE 2.2.4-1

The following sentence has been added to the end of paragraph 3 in Section 2.2.4 in the Water Use Efficiency Program Plan:

“Where appropriate, attention will be focused on overcoming technical and public perception barriers to water recycling.”

WUE 2.2.4-2

The approach to water recycling will include water recycling feasibility planning as part of the urban conservation certification effort (see Section 2.2.2, “Urban Water Use Efficiency Approach”). Presently, all urban water agencies that are required to prepare Urban Water Management Plans under California Water Code Section 10610 et seq. also must prepare a water recycling feasibility plan as part of the process (California Water Code Section 10631). CALFED will help urban water suppliers comply with these regulations by assisting local and regional agencies with preparation of water recycling feasibility plans (that meet the requirements of the Urban Water Management Planning Act).

WUE 2.2.4-3

CALFED has made this correction in the Water Use Efficiency Program Plan.

WUE 2.2.4-4

CALFED has made this correction in the Water Use Efficiency Program Plan.

WUE 2.2.4-5

CALFED staff will be working cooperatively with many entities to help refine its water recycling approach. Staff will include discussions with the AWMC.

WUE 2.2.4-6

CALFED’s solution time frame is 30 years or more. The intent is to try to resolve issues and implement planning and design of projects as soon as possible. However, the CALFED agencies are fully aware that implementing recycling projects can take many years.

2.3.1 Stage 1 Actions

WUE 2.3.1-1

In October 1999, Governor Davis signed legislation (Senate Bill 970) that includes additional water rights protection provisions. The author of this bill, Senator Jim Costa, intended these provisions to provide additional water rights protections so that those who offer their water for sale using conservation measures would not put their water rights at risk by temporary transfers to other users, including the environment. The CALFED agencies believe that this bill removes the need for additional water rights protections. CALFED has removed reference to such investigations.

For additional response regarding protecting area-of-origin water rights, please refer to common response 13.

WUE 2.3.1-3

The following sentence has been inserted (at the end of action item 10 on page 2-10 in the June 1999 Water Use Efficiency Program Plan):

“Support for implementing refuge water management will also include funding for directed research (Years 1-3).”

WUE 2.3.1-4

A CALFED Stage 1 action to develop legislation for water measurement requires appropriate measurement for all water users in California. CALFED staff will take into account costs, benefits, and geographic extent of the solution area when defining appropriate measurement. Likewise, staff will consider appropriate geographic definition in developing its urban certification program and definition of appropriate measurement.

WUE 2.3.1-5

CALFED will not propose legislation that will undermine the agricultural and urban MOUs. The Water Use Efficiency Program will define appropriate measurement during Years 1-3 in Stage 1. The process for defining appropriate measurement is expected to include a team of technical irrigation experts. The findings of this technical team will be published and incorporated into any decision regarding potential water measurement legislation.

WUE 2.3.1-6

CALFED does not intend to create added bureaucracy or redundancy to the CUWCC or AWMC. Rather, CALFED is obligated to include broad stakeholder representation in review and implementation of the Water Use Efficiency Program. Where possible, CALFED will rely on both the CUWCC and the AWMC.

WUE 2.3.1-7

The intent of this proposed Stage 1 action is to protect water rights of entities who choose to conserve and transfer water. This action is not expected to weaken any existing water rights.

WUE 2.3.1-8

The estimate on page 2-12 in the June 1999 Water Use Efficiency Program Plan is a preliminary estimate of water recycling costs. The estimate provided on page 159 in the June 1999 Implementation Plan is for all water use efficiency activities.

WUE 2.3.1-9

Stage 1 action item 9 in the June 1999 Water Use Efficiency Program Plan indicates CALFED's intention to assist with resolving legal and institutional constraints to water recycling. CALFED fully intends to work with stakeholders during Stage 1 to identify opportunities for such resolution.

WUE 2.3.1-10

This type of information will be the subject of actions directed by CALFED early in Stage 1. CALFED will look to stakeholders for their constructive input into these issues as they are developed.

WUE 2.3.1-11

The Water Use Efficiency Program element will include increased technical assistance. The purpose of technical assistance is to remove barriers to conservation adoption. CALFED staff will pursue the issue of public perception during Stage 1.

2.3.2 Assurances

WUE 2.3.2-1

Assurances are an important aspect of the agricultural water use efficiency element. The agricultural water use efficiency steering committee is currently engaged in discussions concerning whether and how regulatory assurances will increase the effectiveness of implementation. This issue is expected to be clarified prior to the ROD.

WUE 2.3.2-2

While program linkages are a necessary component of the overall Program, linkages between Water Use Efficiency and construction of new storage will be implemented such that they will not unnecessarily link efforts to meet the needs of one area with the progress or lack of progress in another area. See common response 4 for additional information.

WUE 2.3.2-3

CALFED staff will consider agency and stakeholder viewpoints in crafting appropriate additional and as yet undetermined consequences for noncompliance with agricultural water use efficiency measures. This issue is expected to be clarified prior to the ROD and resolved during Stage 1.

Any Certification proposal advanced as part of the CALFED process will require legislative approval. At present, the California Urban Water Conservation Council (CUWCC) is a non-profit organization created by the Urban MOU to provide support and assistance in implementing cost-effective urban BMPs. The council is governed by two voting groups: Group 1 consists of water agencies, and Group 2 is comprised of environmental and public advocacy organizations. Under certification, the CUWCC's status will need to be formalized by the Legislature, and a separate enforcement entity (such as the SWRCB) will need to be designated.

The Water Use Efficiency Program and the proposed urban certification process will exempt water suppliers from implementing water conservation activities that are not cost effective. However, the cost of conservation planning and certification compliance are considered to be the responsibility of water agencies under the California Water Code prohibitions against waste and unreasonable use. The proposed consequences of the certification process would limit an agency's access to new CALFED water and is not expected to affect existing water rights.

On page 1-4 in the June 1999 Water Use Efficiency Program Plan, the document states, "California irrigators and growers have implemented pioneering methods to manage water supplies and improve efficiency." Further, the Water Use Efficiency Program will rely on an incentive-based approach and will not mandate metering. The

incentive-based approach will be based on quantifiable objectives that will simultaneously recognize regional conservation needs and past conservation efforts. The element also will incorporate the work of the AWMC (formerly AB 3616). Please also refer to response WUE 2.3.1-4.

WUE 2.3.2-4

CALFED staff will consider agency and stakeholder viewpoints in crafting appropriate additional and as yet undetermined consequences for noncompliance with agricultural water use efficiency measures.

WUE 2.3.2-5

We concur. The reference to “water seller” has been deleted from paragraph 1 on page 2-14 in the June 1999 Water Use Efficiency Program Plan.

2.3.3 Data Gathering, Monitoring, and Focused Research

WUE 2.3.3-1

CIMIS is a useful tool for understanding the water needs of crops, including landscape vegetation. CALFED agrees that urban communities can promote the benefits of this tool to their users through a variety of methods. Given the programmatic nature of the Water Use Efficiency Program, the details of implementing such promotions are not developed. However, this is an excellent example of what can be promoted as part of the actions described in this section in the Water Use Efficiency Program Plan.

WUE 2.3.3-2

CALFED agrees with these comments and in the final Water Use Efficiency Program Plan has included an action focused on increased data gathering and focused research. This is an excellent example of a need that can be facilitated by this action during Stage 1 implementation.

WUE 2.3.3-3

CALFED will monitor and quantify the benefits of water use efficiency actions throughout the CALFED solution area.

2.3.4 Program Linkages

WUE 2.3.4-1

The following paragraph has been added to the end of the bulleted list in Section 2.3.4 in the Water Use Efficiency Program Plan:

- **Adaptive Management** - The water use efficiency element will be reevaluated periodically and if necessary adjusted to reflect changes in our understanding of water efficiency and related Program elements such as water quality, ecosystem restoration, and water use supply reliability. This will be consistent with CALFED’s adaptive management approach. This allows the CALFED Program to begin investing in water use efficiency actions while estimates of future conservation potentials are being refined.

Please see common response 2 for more information about why the Preferred Program Alternative includes Storage and Conveyance elements.

3.1 Agricultural Zones

WUE 3.1-1

CALFED defines its solution area as those areas that are directly or indirectly connected to the Bay-Delta. The existing Imperial Irrigation District/The Metropolitan Water District of Southern California (MWD) water transfer program is an example of how changes in water use in the lower Colorado River region can help meet demand in southern California (thereby reducing Bay-Delta demand).

3.2 Urban Zones

WUE 3.2-1

The word “goal” in the following sentence in paragraph 1 on page 3-5 in the June 1999 Water Use Efficiency Program Plan has been changed to “potential” in the final plan:

“Because of the variation in conservation and reuse potential, urban areas were separated into the same regional zones used for agricultural.”

4. Agricultural Water Use Management and Efficiency Improvements

WUE 4-1

Paragraph 4 on page 4-1 in the June 1999 Water Use Efficiency Program Plan has been replaced with the following paragraph:

The Panel agreed that the values contained here are acceptable preliminary estimates of conservation potential. They also made several valuable recommendations for refining these estimates and strengthening the methodology. These recommendations included presenting estimates of evaporation reduction potential. The Panel’s recommendations will be included in a refinement of these estimates, which will be conducted during the first year of Stage 1.

4.2 General Statewide Assumptions

WUE 4.2-1

Changes in crop mix, fallowing, and permanent land retirement are intentionally not included in the Water Use Efficiency Program. These are not viewed as “conservation measures” as CALFED uses the term in the Water Use Efficiency Program. These measures could occur, however, as a result of actions taken by individual water rights holders through participation in separate water markets. The Water Use Efficiency Program has the potential to increase the usable water supplies only where it can reduce irrecoverable flows. In areas where irrecoverable flows are not available, the program has the potential to improve water quality and in-stream flow and timings. Tools such as the Water Management Strategy, currently underway, incorporate various scenarios of conservation savings, storage quantities, and fallowing such that more informed decisions on specific actions can be made. This effort will continue to be refined during Stage 1.

Please see common response 13 for more information about CALFED and area-of-origin water rights.

WUE 4.2-2

CALFED has modified sentence 6 on page 4-6, first complete paragraph, in the June 1999 Water Use Efficiency Program Plan to read:

“For a grower, the decision to spend capital is generally made when the capital will be returned over a relatively short period of time.”

WUE 4.2-3

CALFED has modified sentence 2, second complete paragraph, in the June 1999 Water Use Efficiency Program Plan to read:

“For example, some growers use field workers not trained in irrigation management to irrigate rather than a specially trained irrigator.”

WUE 4.2-4

CALFED has deleted the indicated sentences from the Final Water Use Efficiency Program Plan.

4.5 Hydrologic Interconnections

WUE 4.5-1

Please refer to response WT 3.4.1-2 (in the Water Transfer Program Plan Responses to Comments) for a discussion on transferability of conserved water.

CALFED is consistent in its discussion about water conservation and water transfers. The conservation estimates provided by CALFED are separated into two primary categories: recovered losses with potential for rerouting flows, and potential for recovering currently irrecoverable losses. Each category is defined in the Water Use Efficiency Program Plan.

This section in the Water Use Efficiency Program Plan describes hydrologic interconnections to provide readers a better understanding of why CALFED distinguishes between these categories.

4.7 Estimating Agricultural Water Conservation Potential

WUE 4.7-1

CALFED agrees that there are continual changes to cropping patterns and to the actual quantity of irrigated agricultural land. The conservation estimates in the Water Use Efficiency Program Plan are based on 1995 “normalized” cropping patterns and subsequent water use. Normalized patterns reflect what would be grown given normal hydrologic conditions—knowing that cropping patterns shift annually partly because of water supplies.

Furthermore, CALFED’s estimates of potential water savings are based on analyzing potential changes in water management practices, not cropping patterns. Water savings that result from changes in cropping patterns are

legitimate water savings and would likely, if not needed by the user making the change, be made available through a water transfer to help satisfy another demand. One of the assumptions in Section 4.2 in the Water Use Efficiency Program Plan states, “Although other changes in farm management also would reduce consumptive use of water, only conservation of applied water is discussed [in this document].”

The role of other water management actions will be considered as part of the Water Management Strategy, currently underway. This effort will continue to be refined during Stage 1.

WUE 4.7-2

The methodology used by CALFED to determine agricultural conservation savings is very simple. CALFED used: (1) data to determine existing water use rates and, (2) assumptions assigned to the water use to various fates—evapotranspiration (ET), surface runoff, conveyance losses, and deep percolation. Savings were estimated by assuming that surface runoff and deep percolation could be reduced by various levels under no action and with-CALFED conditions. CALFED made absolutely no assumptions that took into account or limited the irrigation technologies that could be implemented to achieve these savings. Rather, CALFED calculated a savings based on improved delivery—from any kind of irrigation system or management improvement. The no action increment of savings represents that savings that will be achieved as a result of existing trends, even absent a CALFED solution.

CALFED’s estimates were further supported by findings of the independent review panel (refer to the Summary Report by the Independent Review Panel on Agricultural Water Conservation Potential, December 14-16, 1998; report prepared January 29, 1999). Although this panel identified potential refinements, the panel generally concurred that the conservation estimates were “a reasonable initial estimate of overall agricultural water conservation potential.”

WUE 4.7-3

CALFED supports continued agriculture sustainability, including adequate and efficient soil leaching to avoid salinization. This is reflected in our variable assumption for a leaching fraction to account for water that is unavailable to conserve. In other words, this water may result in deep percolation that is seemingly inefficient, but maintaining this water is critical to manage the salinity in the crop root zone. Current Program development efforts for water use efficiency assume that adequate funding will be available to assist with implementation measures.

WUE 4.7-4

During initial development of the agricultural water conservation estimates, it became obvious to CALFED that discussing conservation savings in terms of efficiency improvements was misleading and not helpful to the overall objective. Many stakeholders believed that CALFED should base estimates on on-farm irrigation efficiency improvements. However, this type of on-farm data with statewide coverage does not exist. Only regional information regarding ET, applied water quantities, and regional depletion (a combination of ET and other losses such as conveyance evaporation, losses to salt sinks, or non-crop vegetation) was available. It was obvious to CALFED that the only water savings potential is something less than the difference between what is applied regionally and the ET for that same region—which is what CALFED attempted to estimate. CALFED has removed the reference to efficiency improvements from the estimating methodology to reduce the confusion for readers.

CALFED is the first to acknowledge that numerous individual farm fields are probably as efficient as economically feasible. At the same time, many fields can be much more efficient. Furthermore, as the economics of farming continue to evolve, what is economically infeasible now may be appropriate to implement in the future thus resulting in further conservation savings that were once assumed unavailable.

The particular data used to calculate potential savings in the Tulare Lake Basin (see Attachment A to the Water Use Efficiency Program Plan) actually represent a reduction in application of 15-20%. Another way to state this is that about half of the current “losses” can be conserved. Actual on-farm irrigation efficiency will vary since there are often opportunities for water that runs off one field or farm to be reapplied by a downstream user. This is partly why CALFED chose not to calculate or display estimates in terms of efficiency improvements.

Finally, although the Tulare Lake Basin is considered a “closed” system, several thousand acres of evaporation ponds are intended primarily to evaporate surface and sub-surface runoff. Although a significant amount of water that reaches these ponds is necessary for leaching, it is doubtful that there is no “waste.”

4.7.1 Input Data Necessary to Develop Estimates

WUE 4.7.1-1

CALFED’s conservation estimates used normalized 1995 data from DWR regarding existing agricultural water use. The CALFED agencies consider this to be the appropriate baseline from which to calculate conservation potential. Under this methodology, there is really no limit on the total number of acres irrigated in any given region. The limit is on the amount of water available to be applied. Conservation measures that allow for savings to be reallocated to other agricultural uses may well allow for increased irrigated acreage. At the same time, CALFED does recognize the long-term trend for less irrigated agricultural land, due in part to urbanization but also due to limitations in water supplies, mismanagement of lands, and other factors.

As for existing conservation efforts, they are recognized by CALFED by default through the use of the DWR 1995 data. These data account for historical improvements in efficiency.

Finally, in Section 1.2 in the Water Use Efficiency Program Plan, CALFED recognizes conservation efforts in the following statement:

California’s strong public policy emphasis on efficiency and conservation ethic is reflected in the many outstanding water use efficiency and conservation efforts throughout the state. California irrigation districts and growers have implemented pioneering methods to manage water supplies and improve efficiency.

4.8.4 AG4 - Eastside San Joaquin River

WUE 4.8.4-1

The value of 200,000 acre-feet of annual overdraft “primarily in San Joaquin and Madera Counties” was obtained from DWR. Please provide CALFED with the necessary information to increase the value in order to reflect additional overdraft east of Tulare Irrigation District, if a revision is needed. It should be noted, however, that this information was provided to give the reader a general overview of the farming and hydrologic conditions for each CALFED region. The value is not used for any additional purpose.

4.9 Summary of Estimated Agricultural Conservation Potential

WUE 4.9-1

The CALFED agencies believe that the estimate of agricultural water conservation is realistic. The values supported by an independent review panel (refer to the Summary Report by the Independent Review Panel on Agricultural Water Conservation Potential, December 14-16, 1998; report prepared January 29, 1999). More information about the derivation of these values is included in Section 4.7 in the Water Use Efficiency Program Plan.

5.1 Summary of Findings

WUE 5.1-1

CALFED agrees with this comment and has removed the referenced figure. The figure was a remnant of previous cost estimates but is not relevant to the current cost discussion presented in Section 5.8.

5.4 Estimating Urban Water Conservation Potential

WUE 5.4-1

CALFED's estimate of urban water conservation is not based on full implementation of BMPs under the No Action Alternative. As described in the subsections following Section 5.4 in the Water Use Efficiency Program Plan, water savings for each water use sector (residential indoor; urban landscape; commercial, industrial, and institutional; and water distribution system loss and leakage) are developed independent of an assumption of "full implementation of the BMPs in the Urban MOU." For instance, residential indoor conservation estimates were made by (1) assuming a baseline 2020 per capita indoor water use rate, (2) comparing that estimate to the rate that is assumed to occur under a no action condition, and (3) comparing that estimate to a rate assumed under conditions resulting from the CALFED Program. These assumptions are fully documented in the Water Use Efficiency Program Plan.

Furthermore, implementation of the BMPs included in the Urban MOU are based on a cost-effectiveness test. CALFED assumes that this same cost-effectiveness test will result in more measures implemented because of assumptions for the No Action Alternative that likely will change current cost-effectiveness calculations (see Attachment A to the Programmatic EIS/EIR for a description of No Action Alternative features). As such, more Urban MOU BMPs are likely to be implemented by more water suppliers by 2020 without a CALFED Program than are currently anticipated by urban water suppliers today. CALFED's baseline and No Action Alternative assumptions in the Water Use Efficiency Program Plan account for this likelihood in an effort to determine programmatic-level impacts and to understand the order-of-magnitude role of conservation in meeting CALFED's objectives.

Finally, "full implementation" of BMPs, as defined in the CALFED Water Use Efficiency Program Plan, is the amount of savings determined by DWR in Bulletin 160-98, California Water Plan Update, November 1998. In that document, DWR calculates savings for "quantifiable BMPs" only—those BMPs for which DWR could make an assumed conservation estimate—and assumes a saturation level (for example, the percentage of total households implementing a quantifiable BMP like ultra-low-flow toilets). Their calculations do not represent total saturation of BMPs, nor do they account for savings from nonquantifiable BMPs (for example, BMP No. 3, system water audits, leak detection, and repair). The CALFED agencies believe that it is inappropriate to assume that the full implementation savings estimated by DWR represents what can be saved if BMPs were implemented by the

majority of retail water agencies and the majority of urban water users. Therefore, CALFED believes that savings are achievable in addition to DWR's value and without a CALFED Program. The Water Use Efficiency Program actions can then result in greater water savings due to (1) even greater levels of implementation of the current list of BMPs through financial support for conservation actions that are not locally cost effective, and (2) additional conservation measures that likely will be more commonplace in the next 30 years (for example, recirculating hot water systems and low-water-use appliances) as technology improves and public acceptance increases.

This detail of the certification process is not completely defined in this Programmatic EIS/EIR but will be resolved during Stage 1.

WUE 5.4-2

As presented in the Water Use Efficiency Program Plan, CALFED estimates conservation potential for four water use sectors: (1) residential indoor; (2) urban landscape; (3) commercial, industrial, and institutional; and (4) water distribution system loss and leakage. Potential savings for each sector are calculated by establishing a baseline condition (for example, residential indoor water use rates in 2020 given existing actions), assuming a no action condition (for example, residential indoor water use rates in 2020 given implementation of BMPs by more suppliers and users, see response WUE 5.4-1), and assuming a with-project condition that results from CALFED's actions (for example, residential indoor water use rates in 2020 that result from CALFED incentives and assurance mechanisms). This process results in estimates of savings under a no action condition (the difference between baseline and no action assumptions) and estimated savings under with-project conditions. There is no double counting.

CALFED agrees that the current list of BMPs in the Urban MOU is extensive and incorporates most, if not all, types of conservation measures. The key, however, is in the assumption of how many BMPs are implemented under given conditions. Actions undertaken by water suppliers and users under the CALFED with-project condition are the same as those under the no action condition and under the baseline condition. The implementation levels that result in greater savings at each increment differ.

Finally, CALFED's conservation estimates were developed to help design the Water Use Efficiency Program. Understanding the potential levels of conservation with and without CALFED actions aids in understanding types and levels of incentives and assurance mechanisms necessary to achieve greater levels of water use efficiency in the urban sector.

WUE 5.4-3

CALFED agrees with this point and has ensured that the Final Water Use Efficiency Program Plan contains appropriate statements regarding the limitations of assumptions and water savings estimates. It should be noted, however, that the Water Use Efficiency Program itself is not predicated on the actual conservation estimates. Rather, these values helped CALFED to design the appropriate types and levels of incentives and assurance mechanisms.

To improve these types of shortcomings for the benefit of future planning exercises, the Water Use Efficiency Program includes an action aimed at data gathering, monitoring, and focused research. This action will help bring needed resources to an important part of future conservation planning and implementation. Please refer to Section 2.3.3 in the Water Use Efficiency Program Plan for more information on this CALFED action.

Full implementation of BMPs, as used in this section in the Water Use Efficiency Program Plan, is the amount of savings determined by DWR in Bulletin 160-98, California Water Plan Update, November 1998. The amount is based on a limited level of implementation of quantifiable BMPs included in the Urban MOU. Not all of the BMPs are quantifiable. As such, CALFED's no action condition and its with-project condition assume greater levels of implementation (that is, more users/water suppliers are implementing measures) than assumed in DWR's estimate.

CALFED agrees that the current list of BMPs in the Urban MOU is extensive and incorporates most, if not all, types of conservation measures. The key, however, is in the assumption of how extensive the implementation of BMPs is under given conditions. Actions undertaken by water suppliers and users under the CALFED with-project condition are the same as those under the no action condition and under the baseline condition. It is not the action that changes but the increased levels of implementation that result in savings at each increment. CALFED's estimates assume that more users and water suppliers implement more of the BMPs, at greater levels than assumed by DWR and included as the baseline.

Finally, implementation of the BMPs included in the Urban MOU are based on a cost-effectiveness test. CALFED assumes that this same cost-effectiveness test will result in more measures implemented because of no action assumptions that will likely change current cost-effectiveness calculations (see Attachment A to the Programmatic EIS/EIR for a description of No Action Alternative features). As such, more Urban MOU BMPs are likely to be implemented by more water suppliers by 2020 without a CALFED Program than are currently anticipated by urban water suppliers today.

WUE 5.4-5

CALFED has included a list of the factors assumed under the No Action Alternative in Attachment A to the Programmatic EIS/EIR. Included in this list are several factors, such as the Central Valley Project Improvement Act (CVPIA), that will continue to change the existing water management environment. Consequently, the cost-effectiveness test applied by water suppliers and others contemplating conservation will continue to evolve even without the influence of CALFED actions. In addition, existing trends and actions being undertaken by water suppliers and water users will continue to result in water conservation savings that do not exist today but are indicated in many local water suppliers planning studies.

WUE 5.4-6

Implementation of the BMPs included in the Urban MOU are based on a cost-effectiveness test. CALFED assumes that this same cost-effectiveness test will result in more measures implemented because of no action and with CALFED assumptions that likely will change current cost-effectiveness calculations (see Attachment A to the Programmatic EIS/EIR for a description of No Action Alternative features). The Water Use Efficiency Program includes incentive programs with funding. The program also includes assurance mechanisms to ensure that more water suppliers are actively evaluating the cost effectiveness of conservation measures. Consequently, more Urban MOU BMPs are likely to be implemented by more water suppliers by 2020 without a CALFED Program than are currently anticipated by urban water suppliers today.

CALFED does recognize the limitations to how much conservation can occur and that our estimates are theoretical (but with practicality factored in). However, the Water Use Efficiency Program is not mandating that particular conservation quantities be reached. CALFED is committed to ensuring that conservation is planned and appropriately implemented, but the end results cannot be accurately predicted.

CALFED's conservation estimates do not differentiate between who implements measures or how they are implemented—actively or passively. The estimates are not intended to provide this type of information because CALFED is not mandating the implementation of particular conservation measures. The Water Use Efficiency Program includes incentive programs and assurances that were developed, in part, by understanding the potential water conservation savings feasible under no action and with-CALFED conditions.

CALFED fully supports continued participation and encourages new data or methodologies to be brought forward in CALFED's Water Management Strategy, currently underway. This effort will continue to be refined during Stage 1 and will be fundamental to more refined conservation estimates at that time.

The conservation estimates used by the CALFED agencies in the Water Use Efficiency Program Plan are intended to help understand the order-of-magnitude role of conservation in improving statewide water management. The values are not absolutes, nor do they necessarily characterize the conditions of each unique community. The calculations of water savings are based on regional assumptions and may or may not fully reflect a particular local condition. For instance, global assumptions for landscape water use for the Bay Region may not reflect use for all areas within this defined region. However, the estimates are intended to illustrate the potential for additional water savings in the urban sector. Achieving additional water savings will require implementing the types of actions described in Section 2 in the Water Use Efficiency Program Plan. While some entities already have achieved high levels of efficiency and can do no more, others may have many untapped opportunities—especially in conjunction with the CALFED-supported technical and financial incentives.

5.4.1 Residential Indoor Conservation

The 1998 update of this study, available at the WaterWiser web site (<http://www.waterwiser.org/wtruse98/indoor.html>), revised these numbers upward, indicating that current averages are higher than those previously estimated. CALFED has assumed values representing typical conditions throughout the state to estimate an order-of-magnitude conservation savings potential. CALFED recognizes that some communities in the state already have a low indoor water use but other areas, even within the same region (for example, southern California), have much higher use rates. CALFED assumes that all communities can average 55 gallons per capita per day (gpcd) by 2020, knowing that some communities will exceed this average and reach this rate sooner than 2020 and other users will lag behind. For the Programmatic EIS/EIR, CALFED assumes that this value is appropriate for the purpose for which it was used.

A CALFED Stage 1 action to develop legislation for water measurement requires appropriate measurement for all water users in California. CALFED staff will take into account costs, benefits, and geographic extent of the solution area when defining appropriate measurement. Likewise, staff will consider appropriate geographic definition in developing its urban certification program and definition of appropriate measurement.

In some metropolitan areas, water meters can be an effective method of encouraging urban water conservation. CALFED encourages and expects to support local water conservation actions. Local creativity and ingenuity will provide the best water conservation solutions.

WUE 5.4.1-2

As indicated in the comment, CALFED's indoor residential water use estimates are based on reducing per capita use by 5 gallons per day as users move from a future baseline of 65 to 60 gpcd under the no action condition. The CALFED actions would result in an additional 5-gallon per capita savings (to 55 gpcd). The discussion in Section 5.4.4 in the Water Use Efficiency Program Plan regarding the *existing* condition of 75 gpcd is informative but irrelevant to the calculated savings. Therefore, the no action estimates (a move from 65 to 60 gpcd) generally do not include savings that have already occurred.

Furthermore, the American Water Works Association Research Foundation (AWWARF) study referenced in the comment was revised in 1998 to indicate that the average per capita indoor use rate was 74 gpcd. The previous report indicated 64.6 gpcd. Therefore, existing water use rates may not be as accurate as some water suppliers consider them to be.

Finally, all the numbers aside, the Water Use Efficiency Program involves a set of actions with incentive programs and assurance mechanisms. It is not a program to mandate a predetermined level of conservation savings. The estimates developed by CALFED helped to shape the water use efficiency actions and helped CALFED to understand the order-of-magnitude role of conservation in statewide water management.

WUE 5.4.1-3

CALFED assumed a feasible per capita use rate of 55 gpcd based on information in the 1998 AWWARF's Residential End Use Study. Some stakeholders feel that it is appropriate to use data from studies such as the AWWARF study to support claims of why existing per capita rates are lower than those discussed by CALFED but do not support the same research information as a source for projected future per capita rates. This information served the needs of CALFED in developing the Water Use Efficiency Program and in understanding the potential role of conservation in statewide water management.

WUE 5.4.1-4

A primary component of the Water Use Efficiency Program is to provide incentives, such as grants and low-interest loans, to help water suppliers and water users implement cost-effective conservation measures. CALFED does not limit these incentives to any particular method of conservation. Therefore, hot water recirculations systems, if a cost-effective approach for a particular interested party, would be supported by the program.

5.4.2 Urban Landscape Conservation

WUE 5.4.2-1

The Water Use Efficiency Program agrees that xeriscape is a useful water conservation tool. Through the incentive programs being developed by CALFED, this tool, along with numerous other water conservation tools, will be promoted throughout the state. These actions will occur during Stage 1 implementation (after the Final Programmatic EIS/EIR is certified).

WUE 5.4.2-2

As noted by the commentor, CALFED acknowledges that no empirical data support the baseline assumption of 1.2 reference ET for landscape water use. CALFED encourages any data to be provided to CALFED that could be used to further support this judgment or to modify the assumption. Given the lack of existing data, the

CALFED estimate of landscape conservation potential is within an appropriate range and assumes that improved baseline data would likely only reduce the current projected savings. Because the 1.2 ET value should be lower, resulting in less water applied, less potential to save would result.

WUE 5.4.2-3

CALFED agrees that not all runoff from landscape irrigation flows to storm sewers and is “recovered” in the downstream water system. On page 5-15 in the June 1999 Water Use Efficiency Program Plan, we note that this is part of the conservation potential as landscape water use slides from 1.2 ET down to and including 0.8 ET. Furthermore, the calculations in Attachment B to the Water Use Efficiency Program Plan document how this savings is calculated.

If there are more appropriate values to use for each region, CALFED would appreciate the data being brought to our attention.

Finally, the conservation estimates are not targets or goals. They were intended to help CALFED design the Water Use Efficiency Program, including identifying the types and levels of incentive programs and appropriate assurance mechanisms. Adjusting for the relatively small volume of additional savings that would result from changing our calculations factors would not result in CALFED changing the design of the Water Use Efficiency Program.

WUE 5.4.2-4

CALFED welcomes any data available from other sources to refine the estimates of conservation potential. Although the methodology employed by the Program is useful, results depend on the inputs. Useful empirical data are lacking; therefore, CALFED used data that were available and made assumptions.

It should be noted, however, that the conservation values are not targets or goals of CALFED. The estimates helped CALFED to design the Water Use Efficiency Program and aided in understanding of the order-of-magnitude role of conservation in statewide water management.

5.4.3 Interior Commercial, Industrial, and Institutional Conservation

WUE 5.4.3-1

In this section in the Water Use Efficiency Program Plan, CALFED does discuss conservation potential in the commercial, industrial, and institutional (CII) water use sector. These values are part of the overall conservation estimate used by CALFED to perform programmatic-level impact analysis and to understand the order-of-magnitude contribution of water conservation as one of several water management tools.

WUE 5.4.3-2

The savings estimated by CALFED for the CII sector represent a programmatic-level assessment to assist with impact analysis and to understand the order-of-magnitude role of conservation in future statewide water management. Data and assumptions used by CALFED were provided and supported by CALFED agencies. The estimates are intended to represent average savings for CII water users throughout the state. Any particular facility or possible sector of industry may likely have much higher water savings.

CALFED agrees that some industrial sites can modify their processes, install more efficient equipment, recycle, use reclaimed water, and otherwise reduce a large percentage of their water consumption.

More than 700 CII water audit surveys have been completed in California in the last 5 years. The numbers reflected in the surveys indicate cost-effective water conservation in the range cited by CALFED. Should parameters change that dramatically affect the cost-effectiveness calculations, significantly more conservation potential may occur. In addition, emphasis on environmental standards adopted by industry (ISO 14000) may encourage more conservation measures to be implemented.

If reductions of 50-90% are feasible, CALFED will incorporate the resultant savings into their programmatic estimates. Such information can be useful during Stage 1 implementation as CALFED continues to design specific components of the Preferred Program Alternative. Tools such as the Water Management Strategy that is currently underway incorporate various scenarios of conservation savings, storage quantities, and fallowing so that more informed decisions can be made on specific actions. This effort will continue to be refined during Stage 1.

Furthermore, CALFED disagrees that reduction of 22% of a particular CII user's water supply is not verifiable and is difficult to justify. In other water use sectors, such as agriculture, savings of only a few percent can easily be verified and are often justified by the user.

The Water Use Efficiency Program is directed at incentive programs and assurance mechanisms designed to ensure that all water use sectors are implementing all cost-effective water conservation measures. The program is not advocating the installation of conservation when it cannot be economically justified. If CII conservation savings are feasible at levels greater than those assumed by CALFED in the programmatic analysis, CALFED's actions (incentives and assurances) will provide the support to implement them.

Also see responses WUE 2.3.1-10; WUE 5.4.3-3; WUE 5.4.3-4; WUE 5.8-1; and WUE 6-3.

WUE 5.4.3-3

Full implementation of BMPs, as defined in the Water Use Efficiency Program Plan, is the amount of savings determined by DWR in Bulletin 160-98, California Water Plan Update, November 1998. The amount is based on a limited level of implementation of quantifiable BMPs included in the Urban MOU. Not all of the BMPs are quantifiable. Consequently, CALFED's no action condition and with-project condition assume greater levels of implementation (that is, more users/water suppliers are implementing measures) than are assumed in DWR's estimate.

CALFED agrees that the current list of BMPs in the Urban MOU is extensive and incorporates most, if not all, types of conservation measures. The key, however, is in the assumption of how extensive the implementation of BMPs is under given conditions. Actions undertaken by water suppliers and users under the CALFED with-project condition are the same as those under the no action condition and under the baseline condition. The implementation levels that result in greater savings at each increment differ. CALFED's estimates assume that more users and water suppliers implement more of the BMPs, at greater levels than assumed by DWR and included as the baseline.

Furthermore, CALFED agrees that limited empirical data are available beyond the U.S. Environmental Protection Agency (EPA) study to support or dispute the assumed savings potential. However, CALFED's estimates were developed to aid in programmatic-level impact assessment and in understanding the order-of-magnitude role of conservation in statewide water management. The estimates were also essential in designing the types and levels of incentive programs and assurance mechanisms.

CALFED agrees that to achieve higher levels of conservation in the CII sector, many of its water users must adopt water management changes. The Water Use Efficiency Program includes incentive programs (including funding) and assurance mechanisms that are intended to result in greater scrutiny of existing water use methods by these users and/or their suppliers. These and other CALFED actions will change the factors assessed in a cost-effectiveness test, likely resulting in greater adoption of conservation measures than the level assumed given current economic and water supply conditions.

Development of local water use efficiency ordinances was provided as an example of an implementation measure. The specific implementation of these and other measures are not within the scope of this programmatic document.

5.6 Regional Conservation Estimates

The highlighted sentence on page 5-25 in paragraph 1 in Section 5.6 in the June 1999 Water Use Efficiency Program Plan has been changed as follows:

“These estimates provide our best estimate of the potential for urban demand but are not goals and targets, and are not intended to be used for planning purposes.”

5.7 Summary of Estimated Urban Water Conservation Potential

The underlying premise of CALFED’s water conservation estimates is that existing BMPs and other water conservation measures will be implemented at greater levels and by more water suppliers and users than the level estimated by DWR in their quantification of full implementation of BMPs as a result of no action factors, such as the CVPIA and other items that may affect the future economics of implementing water conservation measures.

The sentence in paragraph 2 on page 5-48 in Section 5.7 in the June 1999 Water Use Efficiency Program Plan has been modified to clarify this point.

5.8 Estimated Cost of Efficiency Improvements

CALFED agrees with this point and has added the following text at the end of Section 5.8 in the Final Water Use Efficiency Program Plan:

Furthermore, it should be noted that unit costs are only half of the equation when evaluating the merits of a conservation program. Benefits achieved from the measure are the other half. Information on both costs and benefits is essential for appropriate judgments to be made regarding the appropriateness of any particular water conservation program.

CALFED agrees that information is lacking to provide such an analysis. However, the unit cost information in the document was provided solely for informational purposes. CALFED's conservation estimates do not represent targets or goals that the program intends to mandate but were necessary to properly design incentive programs and assurance mechanisms. CALFED does not mandate implementing conservation and further assumes that only cost-effective conservation measures will be implemented (noting that future cost-effectiveness calculations may differ from those today, as cost factors evolve). The Water Use Efficiency Program Plan does not indicate or suggest who is responsible for the cost of water conservation measures. Therefore, it is inappropriate to assume that all of a particular unit cost is to be borne only by water suppliers. At a minimum, CALFED's incentive programs will provide funding sources that will help whoever implements conservation measures to achieve their goals.

6. Water Recycling

WUE 6-1

CALFED agrees with this comment and, although approaching from the other side, attempts to address this issue by reducing the amount of wastewater flow generated as a result of conservation efforts. Please see Section 6.5.1 in the Water Use Efficiency Program Plan.

WUE 6-2

CALFED has reviewed the Executive Summary in the Programmatic EIS/EIR and improved such references where possible. Absent any reference in the Executive Summary, CALFED nevertheless views water recycling as one of several integral tools designed to improve statewide water management. To this end, CALFED will develop the incentive programs necessary to help achieve greater levels of water recycling, as discussed in Section 2 in the Water Use Efficiency Program Plan.

WUE 6-3

CALFED will be refining incentive programs, including identifying types and levels of funding, during Stage 1a of the Program implementation. CALFED will rely on interested stakeholders to help with this process.

6.1 New Water Supply vs. Total Water Recycling

WUE 6.1-1

CALFED agrees that determining such information would be valuable to the extent that it can be determined. During Stage 1 implementation, CALFED proposes to support and participate in such types of studies as part of efforts necessary to determine the appropriate cost-sharing and resource allocations. CALFED would support WaterReuse Association's participation in such studies.

6.2 Understanding Water Recycling Opportunities

WUE 6.2-1

In the following last sentence in paragraph 4 on page 6-5 in the June 1999 Water Use Efficiency Program Plan, the word "ensure" has been replaced with "foster":

“To foster a high degree of public confidence in water recycling, CALFED could provide funding to support current public education programs, and research and development efforts.”

The audience and approach to CALFED outreach activities will be adjusted through an adaptive process, but the specific activities of this approach are not within the scope of this programmatic document.

WUE 6.2-2

The Water Use Efficiency and Water Quality Programs are linked in the objectives of increasing water supply reliability and high-quality water supplies. CALFED agrees that improving the water quality of both Delta water and recycled water can help to achieve those objectives. To that end, CALFED will ~~[[continue to?]]~~ work within the framework described in the Programmatic EIS/EIR and program plans to help local agencies meet the regulatory requirements for water quality.

6.3 Determining Water Recycling Potential

WUE 6.3-1

CALFED has reconciled this discrepancy by revising the reference in paragraph 1 in Section 6.3 to reflect 485 TAF.

6.3.1 Regional Water Recycling Studies

WUE 6.3.1-1

CALFED has added a conditional statement to the existing text.

6.4.1 Supply and Demand Constraints on Potential No Action Levels

WUE 6.4.1-1

CALFED regrets to hear this information. Agencies should not need to react in such a manner. CALFED is committed to helping improve the public acceptability of these and other types of recycling projects. Without broader public acceptance, additional water recycling potential is much more difficult to achieve.

CALFED has modified the reference to San Diego’s project to reflect this information.

WUE 6.4.1-2

CALFED agrees and has changed the wording to reflect that improper timing is among several critical limits, not the most critical limit.

WUE 6.4.1-3

CALFED appreciates this information and has made the necessary changes.

6.4.3 Assumed Water Recycling Potential under No Action Alternative Conditions

WUE 6.4.3-1

While CALFED agencies applaud MWD's efforts to support local recycling programs, the fact remains that CALFED is not a completed action; therefore, actions taken by agencies are part of the no action scenario. Please see Attachment A in the Programmatic EIS/EIR for more detailed discussion of the No Action Alternative.

WUE 6.4.3-2

CALFED agrees that limited empirical data support or dispute the assumed recycling levels. However, CALFED's estimates were developed to aid in programmatic-level impact assessment and to understand the order-of-magnitude role of conservation in statewide water management. The estimates were also essential to help design the types and levels of incentive programs and assurance mechanisms.

To improve these types of shortcomings for the benefit of future planning exercises, the CALFED Water Use Efficiency Program includes an action aimed at data gathering, monitoring, and focused research. This action will help bring needed resources to an important part of future recycling planning and implementation. Please refer to Section 2.3.3 in the Water Use Efficiency Program Plan for more information on this CALFED action.

Furthermore, CALFED did find one reference that may be somewhat useful. A 1996 paper, *A Retrospective Assessment of Water Reclamation Projects* (by Richard A. Mills and Takashi Asano in *Water and Science Technology*. Vol. 33, No. 10-11, pages 59-70, printed in Great Britain) states: "Based on reports on many of these projects, it is found that two-thirds of the projects are delivering 75% or less of the expected amounts of water."

The "projects" referenced are 38 that SWRCB funded since 1980; 25 are now operating. When the paper was written, data for at least 1 or more years of operation were available on 16 of the 25 projects. Comparisons of planned versus actual deliveries are based on records of actual deliveries and use by water users. As a group, the projects were delivering only 63% of the water expected. Two-thirds of the projects were delivering 75% or less than the planned deliveries. This information generally supports our assumption of achieving only 50% of the anticipated levels of water recycling obtained in the CALFED referenced surveys.

6.6 Summary of Statewide Water Recycling Potential

WUE 6.6-1

Please see response WUE 1.4-4. The ranges shown in Table 6-3 in the Water Use Efficiency Program Plan may seem optimistic in light of existing conditions and drivers influencing levels of water recycling. However, factors such as impending changes in wasteload allocation based on total maximum daily load and expected increases in drought shortages due to increased population and economic growth may encourage more than the 65% of 2020 flows shown in Table 6-3 in the Water Use Efficiency Program Plan. These ranges will be refined as Stage 1 implementation of the CALFED solution progresses and the effects of changes in policies and regulations become clear. Furthermore, as indicated on page 6-15 in the June 1999 Water Use Efficiency Program Plan, CALFED's estimated recycling ranges from 30% of 2020 wastewater flow to 65%.

WUE 6.6-2

CALFED appreciates your viewpoints. For the programmatic purposes of this document, the analysis undertaken by CALFED represents an aggressive yet achievable level of water recycling that can and should occur. The focus now should be placed on developing the appropriate tools to accomplish much greater levels of water recycling, as discussed in Section 2 in the Water Use Efficiency Program Plan. The CALFED agencies are committed to working with stakeholders in order to identify and obtain the funding necessary to move recycling to much greater levels in California.

WUE 6.6-3

CALFED acknowledges the uncertainty in developing water recycling estimates because of limited information about the effects of source water quality on the feasibility of projects and because of numerous other impediments. With this in mind, CALFED has developed a broad range of water recycling potential, as presented in Section 6.5.1 in the Water Use Efficiency Program Plan. Furthermore, CALFED's estimates were developed for a few primary purposes:

- To provide information for programmatic-level impact assessments,
- To gain a better understanding of the order-of-magnitude role of conservation and recycling in statewide water management, and
- To aid CALFED in designing the appropriate types and levels of incentive programs and assurance mechanisms.

The estimates are not targets, objectives, or goals. CALFED is not mandating that these or any other levels of water recycling be achieved. CALFED is, however, requiring that many actions (see Section 2 in the Water Use Efficiency Program Plan) be undertaken by water suppliers that will result in the implementation of more reuse projects. The actual savings that will result cannot be more accurately estimated without extensive studies that are beyond the scope of this Programmatic EIS/EIR.

WUE 6.6-4

As shown in Table 6-1 in the Water Use Efficiency Program Plan, CALFED does acknowledge the multitude of uses of recycled water. The estimates developed by CALFED to indicate the potential for future water recycling levels are independent of the uses of that recycled water—whether for agricultural water supply or to augment stream flows. However, CALFED has not included any analysis regarding potential water quality or ecosystem restoration benefits beyond simple water supply. Please see response WUE 6.6-3 for more information on the purpose and limitations of the CALFED analysis.